

p. 9-5

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A LIST OF
FISHES, AMPHIBIANS AND REPTILES
COLLECTED IN ASHE COUNTY,
NORTH CAROLINA

By C. M. BREDER, JR.

The New York Aquarium, and

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INTRODUCTION

The County of Ashe, North Carolina, is little known from the biological point of view and the present paper stands as the first report on the ichthyological and herpetological fauna of it. Mr. C. S. Brimley of Raleigh, N. C., states that the only other reported collection previously made within its boundaries is a small one of insects.

The area in which the specimens were collected on which this list is based is located in the central part of Ashe County and the time spent collecting in this territory extended from July 21 to August 17, 1922. This county is the most northwesterly one of the state, being bounded on the north by Virginia and on the west by Tennessee. The settlement at which headquarters were made is known to the postal authorities as Beaver Creek. It is located about fifteen miles southeast of the junction of the three states and is a typical hamlet of the southern Appalachians. All the collecting was carried on within a radius of five miles of the Beaver Creek post office, whilst by far the largest amount of it was done within less than two miles, and so represents a bit of concentrated collecting within a circumscribed area of small dimension. The land at this point is comparatively fertile and a considerable amount of it has been cleared, some quite recently, limiting the collecting grounds for terrestrial salamanders to rather well defined elevations which still in many cases are covered with the original stands of timber. Lumbering, however, is making rapid inroads on this type of territory.

In the summer of 1915, the senior author spent two months at this same place engaged in other studies and it was then that the salamander fauna forced itself on the attention. Although no definite records were kept it is certain that there has been a considerable reduction in the abundance of these amphibians for which there seems to be no very apparent reason. It hardly seems possible that the lumbering above alluded to could have annihilated the animals in such great numbers for only in occasional places has the forest floor been disturbed to any great extent. Moreover, there seems to have been a considerable change in the fauna in general. Some species now quite or nearly absent were formerly abundant and vice versa. For example, only a single specimen of the common tumble bug, *Canthon*, was seen this year while previously they were ubiquitous. On the other hand, myriapods, arachnids, birds, and mammals were about as before, whilst terrestrial gastropods have noticeably increased in number. A partial explanation may be found in the fact that this summer was somewhat cooler than the one of 1915, and while numerous thunder squalls, which quickly dried, made a wet summer as far as agriculture was concerned, it lacked the drizzles which marked that of seven years previously which kept the soil continually damp. This territory exposes rocks of pre-cambrian formation and near springs at such outcroppings much of the Urodel collecting was carried on. The altitude varies from about 3,000 to somewhat over 5,000 feet above sea level.

The fishes were collected by seine, fyke, dip net and angling gear. A small minnow seine of twenty feet was used in all waters in which its successful operation was possible, while the fyke (Fig. 4), which was likewise of small size and mesh, was set continually in the Beaver Creek, near headquarters. Small ditches, holes and backwaters were worked with a dip net. Angling was, as usual, least productive. The Beaver Creek, from which this place takes its name, runs within a few hundred feet of the post office and at this point an old time grist mill still flanks it. The section in which collecting was done wanders through tilled fields interspersed at various places by small patches of woodland. The Buffalo Creek, which drains the next valley to the northwest, a short distance on horse, empties into the north fork of the New River whilst the Beaver Creek empties into the south. These forks join at a distance of about twelve miles from the collecting site. The creeks are quite similar in general appearance, and while no great difference in the



FIG. 1. MILL HILL

The unforested ground above the cottage was formerly inhabited by great numbers of *Plethodon glutinosus*.



FIG. 2. BEAVER CREEK IN FRONT OF THE POST OFFICE

Nigger mountain in the background. Baptist church in middle ground.



FIG. 3. NEW RIVER AT THE MOUTH OF BEAVER CREEK
The water has little depth here.

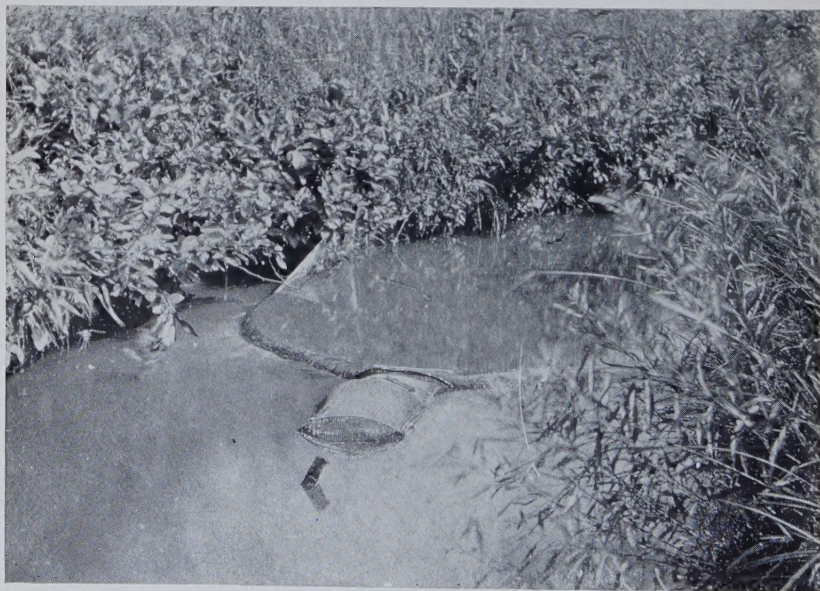


FIG. 4. FYKE NET SET IN BEAVER CREEK
Type of banks found in the open fields.



FIG. 5. SEMI-AQUATIC HABITAT AT THE BASE OF FRENCH'S KNOB
A typical haunt of *Desmognathus*.



FIG. 6. TERRESTRIAL HABITAT AT THE BASE OF FRENCH'S KNOB
A typical haunt of *Plethodon*.



FIG. 7. NEAR THE SUMMIT OF BLUFF MOUNTAIN
The type of rugged country encountered at the highest altitudes.



FIG. 8. BEAVER CREEK
View a short distance below the Post Office. French's Knob in the left background.

respective faunas could be noticed still there was a perceptible difference in the relative frequencies of the various species as is indicated in Table No. 1.

All amphibians and reptiles were collected by hand. Belts made similar to those used for cartridges, but instead fitted with pockets for holding tobacco tins, were found extremely useful and convenient as carriers, especially for living material of small size. Both the herpetological and ichthyological specimens were preserved in formalin in the field, and were transferred to alcohol on arrival at the laboratory. The collection has been deposited in the American Museum of Natural History with the exception of some specimens that have been retained for reference. The locations of collecting sites mentioned throughout are defined under "Distribution of fishes" or "Distribution of salamanders" on pages 13 and 19 respectively.

Dr. E. R. Dunn, of Smith College, gave very material aid in checking our identifications and in determining difficult specimens among the amphibia. Dr. G. K. Noble and Mr. J. T. Nichols permitted our use of the herpetological and ichthyological material of the American Museum, of which they have charge respectively. Mr. A. I. Ortenberger, of the same institution, aided in the determination of the snakes. To these gentlemen we are accordingly indebted and wish to here express our appreciation. Likewise we are grateful to Mr. and Mrs. R. A. Hamilton at whose home we were guests and who facilitated the collecting by their many kindnesses.

The localities, sizes, et cetera, are given in some detail, even at the risk of being accused of undue verbosity, but on account of the violent changes which have taken place in the fauna of this region in the past seven years, as before noted, it is deemed advisable to have an accurate record of just what has been collected, for purposes of future comparison. Further, it is the writers' belief that an error in this direction is preferable to one in the opposite. Such are only too often shown by regional lists of this nature. The metric system is used throughout and the measurements given for the fishes all refer to the standard lengths; that is, the shortest distance from the tip of the snout to the base of the tail. The common name or names given for each species are those by which the natives know the animals. In several cases these are rather unique. In instances where more than one is given the first is the appellation most commonly used.

Class PISCES

Family CATOSTOMIDAE

- 1—*Catostomus nigricans* LeSueur. Hogfish.

Ten examples of from 51 to 240 mm. were taken between July 24 and August 3, all from the Beaver Creek from a short distance above the mill to a point about one mile further down stream.

Family CYPRINIDAE

- 2—*Cyprinus carpio* Linnaeus. Carp.

Several of the more active natives have constructed carp ponds and have had sufficient success with them to supply their occasional demands for carp flesh. These ponds are of the simplest nature and are of small size. On account of the torrential rains common to this country the mud and silt brought down soon fills the ponds making it imperative to clean them out or build new ones. The two ponds visited were rather decadent, one appearing to be empty of fish and nearly filled with silt, whilst the other contained a fair crop of fry. Doubtless, many fishes escape from these ponds as very few safeguards have been taken to prevent losses in this manner. Such that do escape probably pass down to the relatively quiet waters of the New River in preference to the rapid mountain streams. Just why these people have taken to cultivating carp is not clear since their ponds are all fed by excellent trout streams.

- 3—*Campostoma anomalum* (Rafinesque). Minnow.

Of six examples ranging from 53 to 75 mm. only one was taken from the Beaver Creek, about a mile below the post office on July 28, while the remaining five were taken from the Buffalo Creek on August 12. Another of 57.5 mm. was taken from the Beaver Creek near the post office in the summer of 1915.

- 4—*Semotilus atromaculatus* (Mitchill). Chub, Hornyhead.

Eighty-one examples of from 35 to 154 mm. were taken. Sixteen of the smaller sized fishes were taken from the Buffalo

Creek on August 12. The remainder were taken from Beaver Creek, from above the mill to a point about one mile down stream, between July 24 and August 3. Only *Rhinichthys* exceeds this species in abundance in these waters. Many of the natives think the smaller ones are immature trout.

5—*Notropis photogenis photogenis* (Cope). Minnow.

Five examples of from 63 to 73 mm. were taken from the Beaver Creek within sight of the mill from July 24 to August 3. This record stands as an addition to the fish fauna of North Carolina. The almost indistinguishable race, *amoenus*, well known from the coastal plain drainage, is replaced by *photogenis* in this territory which is Mississippian, as should be expected. In comparing these fishes with specimens in the American Museum of Natural History, there was found a somewhat larger individual, identical with the present material, which had been collected by Morton L. Church, at Marshall, N. C., that had not been recorded. Dr. Henry W. Fowler, of the Philadelphia Academy of Natural Sciences, kindly examined these specimens and considers them unquestionably *photogenis*.

6—*Rhinichthys atronasmus* (Mitchill). Minnow.

One hundred and five examples of from 20 to 68 mm. were taken. Eighty-six were taken from the Beaver Creek, from above the mill to about a mile below it, from July 24 to August 3, whilst the remainder were taken from the Buffalo Creek on August 12. This species was particularly abundant, the smaller ones finding their way into the most tiny trickles whereas the larger examples were usually schooled up in shaded holes in the larger branches and creeks. Seen in the New River on August 13.

7—*Hybopsis kentuckyensis* (Rafinesque). Hornyhead, Minnow.

Three examples of from 109 to 110 mm. were taken from the New River at the mouth of the Beaver Creek on August 13 by hook and line.

Family SALMONIDAE

8—*Salmo irideus* Gibbons. Rainbow Trout.

Reported by natives, who stated that a plant was made by the United States Bureau of Fisheries some years ago and that occasional examples have been taken since that time of under a foot in length. None seen by us.

9—*Salvelinus fontinalis* (Mitchill). Speckled or Brook Trout.

Two immature examples of 119 and 163 mm. were taken on July 24 from the Beaver Creek above the mill. The stomach of the smaller example contained a crayfish about 12 mm. long and the larger one was full of insect fragments. Some years ago plantings of this species were made by the Bureau of Fisheries and these may be of that stock as lumber camp polutions practically wiped out the native trout some years back. Since then protective legislation has checked the contamination from them and the streams appear to be well recovered.

Family CENTRARCHIDAE

10—*Ambloplites rupestris* (Rafinesque). Redeye, Rock Bass.

One example of 141 mm. was taken from the New River by angling, slightly above the mouth of the Beaver Creek (Figure 3), on August 13. Others of smaller size were seen at this time.

Family PERCIDAE

11—*Etheostoma flabellare* (Rafinesque). Young Hogfish.

Ten examples of from 18 to 36 mm. were taken from Beaver Creek between a point slightly above the mill and one about a mile below it. The natives consider this the young of *Catostomus*.

Family COTTIDAE

12—*Cottus ictalops* (Rafinesque). Poisonhead.

In the summer of 1915 this was one of the most abundant forms of fish life at this place, a simple seine made of a gunny sack often bringing up a dozen or more from a short haul. One specimen preserved at the time measured 61 mm. and was about the average size. A diligent search of all the waters in 1922 failed to reveal a single individual, and the crop of small boys that have sprung up in the intervening seven years do not know the name 'Poisonhead.' The small boys of 1915, no longer such, aver that they do not remember having seen any for a long time. The various small cyprinids on the other hand seem to be more abundant.

DISTRIBUTION OF FISHES AT BEAVER CREEK

Table No. 1 lists the species collected according to the three chief sites with reference to their relative abundance. The locality called Beaver Creek includes a stretch of that stream of about two

miles in extent, reaching from a point about three-quarters of a mile above the post office to one about one and one-quarter miles below it. It is here that most of the collecting was carried on and includes all the confluent of this stream between these two points. The other two localities were visited but once each. The Buffalo Creek was collected in, over a stretch of about one half mile, at the base of the northwest side of the Paddy Mountain. The south fork of the New River was angled in only, close to the mouth of the Beaver Creek.

TABLE NO. 1

DISTRIBUTION OF FISHES			
Species	Beaver Creek	Buffalo Creek	New River
1 <i>Catostomus nigricans</i>	Common	Reported	Reported (large)
2 <i>Cyprinus carpio</i>	Known from fish ponds only		
3 <i>Campostoma anomalum</i>	Occasional	Common	—
4 <i>Semotilus atromaculatus</i>	Abundant	Abundant	—
5 <i>Rhinichthys atronasus</i>	Abundant	Abundant	Common
6 <i>Notropis p. photogenis</i>	Occasional	—	—
7 <i>Hybopsis kentuckyensis</i>	—	—	Common
8 <i>Salmo irideus</i>	Reported	—	—
9 <i>Salvelinus fontinalis</i>	Not scarce	Reported	Reported
10 <i>Ambloplites rupestris</i>	—	—	Common
11 <i>Etheostoma flabellare</i>	Rather common	—	—
12 <i>Cottus icталopѕ</i>	Absent, formerly abundant	—	—

Class AMPHIBIA

Order CAUDATA

Family CRYPTOBRANCHIDAE

1—*Cryptobranchus alleghehniensis* (Daudin). Water Dog.

Reported by natives from both the New River and Beaver Creek. The bed of the creek was recently shifted near West Jefferson for some road building operations and as a result several were noticed by the engineers who gave a fair description. No examples were seen by us.

Family SALAMANDRIDAE

2—*Triturus viridescens viridescens* Rafinesque. Water Lizard.

Described by natives from a carp pond near Jefferson. On search we failed to find any, but very likely they occur here sparingly as the natives' descriptions were reasonable.

Family PLETHODONTIDAE

3—*Plethodon cinereus* (Green).

Wood Puppy.

Common in damp woods of not over 4,000 feet elevation. Taken on Mill Hill, near the Baptist church, and at the base of French's Knob under damp litter, between July 22 and August 3. A curious feature is that out of the thirty-two individuals which varied from 34 to 76 mm. and numbers not collected, only a few with red backs were seen. This is especially interesting since Dunn¹ in taking forty-eight specimens at Linville (thirty-three miles southwest of here) writes "only two had black backs."

Apparently this species holds the lower grounds as none were taken on the higher mountains. On the sides of Bluff Mountain it appears to be replaced by *P. metcalfi*. At least it is strange that the only place from which we took that species the present was absent. The point of greatest abundance for *cinereus* in our territory was the small patch of damp woods behind the Baptist church. Here large numbers of these supple little gray salamanders could be taken with slight effort.

4—*Plethodon glutinosus* (Green).

Wood Puppy.

Abundant. Taken in a large variety of both damp and dry localities. Numbers were seen which were not collected, a few even in parched fields of stubble under stones or bits of wood of small size. Sixteen were collected ranging in size from 44 to 157 mm. between July 23 to August 2 from the following places: Mill Hill, damp woods; near Baptist church, damp woods; Base of French's Knob, damp woods; Bluff Mountain, damp woods; Buck Mountain, near Mica Mine; Southwest slope of Nigger Mountain, both damp and dry localities.

5—*Plethodon metcalfi* Brimley.

Wood Puppy.

Taken only on Bluff Mountain in damp woods as follows: 93, 98, 111 and 113 mm. The first varied from the typical *metcalfi* in that it possessed a few pigmentless areas on the sides which gave it a resemblance to *P. glutinosus*. Thus far all specimens of *metcalfi* have agreed in the uniformity of the gray coloration on the back and sides. This individual demonstrates that *metcalfi* may approach *glutinosus* in coloration by occasionally possessing these white spots

¹ Dunn, Emmet R. Reptile and Amphibian Collections from the North Carolina Mountains with especial Reference to Salamanders. Bull. Amer. Muse. Nat. Hist. Vol. XXXVII, Art. XXIII, Oct. 13, 1917, N. Y.

even as the converse is true in that *glutinosus* sometimes lacks them. The presence or absence of these spots can therefore be used no longer by itself as a simple means of separating the two.

6—*Plethodon yonahlossee* Dunn.

Wood Puppy.

One adult of 131 mm. was taken from under a rotten log on the damp southwestern slope of Mill Hill, July 26. Two young of 48 and 47 mm. on Nigger Mountain and two young of 64 and 56 mm. on Bluff Mountain. The young all showed the characteristic spots. These altitudes are slightly less than that of the type locality, they being from 3500 to 4000 feet whereas the latter was between 4100 and 4400. This is the most northerly record for the species.

7—*Eurycea bislineata wilderae* Dunn.

This recently described race² was taken in a variety of places, usually damp, although it was found further from water and in drier places, at times, than the writers had ever seen *bislineata* in the latitude of New York City or Washington, D. C. Five adults were collected from July 25 to August 8 varying from 28 to 71 mm. at these places: Mill Hill, both damp and relatively dry woods; near Baptist church, in spring; Bluff Mountain, in spring. The specimen of 28 mm. which was taken in a spring near the summit of Bluff Mountain presented an unusual type of coloration. The usual yellowish back, bordered with a black line on either side, was replaced with a ground color of dusky brown. This color extended downwards to the insertion of the limbs, and only a faint suggestion of the black lines of typical individuals was present. About six lighter brown spots followed both these suggestions of lines at their dorsal edge between the fore and hind limbs. They showed a slight tendency towards ocellation, as did other less conspicuous markings on the caudal region. These markings were not widely different from those of some of the larvae which seem to have a considerable range of individual variation. However, this specimen showed no larval fin fold or other immature characteristics and appeared to be fully metamorphosed, although it was smaller than some larvae we took, our largest being 32 mm. as against the 28 mm. of this example. Taxinomically, it otherwise checks well for this

² Dunn, Emmet R. Some Reptiles and Amphibians from Virginia, North Carolina, Tennessee and Alabama. Proc. Biol. Soc. Wash., Vol. 33, pp. 129-138, Dec. 30, 1920.

species and we believe it can be put down simply as an abnormality. The larval material was taken from the following places:

Spring near summit of Bluff Mountain. One 32 mm. in company with the above described specimen and one adult of 30 mm., August 8.

Spring near look off rock on Nigger Mountain. Temperature of water 54° F. Ten, 17 to 27 mm., August 9.

McKeever's spring, northeast base of Nigger Mountain. Temperature of water 48° F. Seven, 27 to 33 mm., August 9.

8—*Pseudotriton ruber nuditus* Dunn. Red Lizard.

Four examples were seen, two of which subsequently escaped. The others represented the two most extreme types of variation of this race as yet seen by the describer. Both of these were in exceptionally dry places and only about a mile apart.

One near the Baptist church, on a hillock taken July 28, measuring 96 mm., was very lightly speckled with small black punctulations on the back, hardly any of which extended beyond the insertion of the hind limbs. The appearance in life was a brilliant waxy red, the subspecific designation being especially appropriate for this individual.

The other on Mill Hill, at the edge of dry field, taken on July 31, measuring 85 mm., was covered with black spots of a heavy sort extending nearly to the tip of tail, although there was no tendency for the larger ones to fuse as in *ruber*. Neither was there any smaller stippling interspersed between the larger spots.

Larvae were taken as follows: Mill Hill, July 25, 42 and 37 mm.; Bluff Mountain, August 8, 29 mm.

9—*Desmognathus fuscus fuscus* (Rafinesque). Wood Puppy.

This widely distributed form was not hard to find but by comparison with *D. monticola* was not abundant. Fifteen specimens were taken between July 25 and August 9 which varied from 46 to 75 mm. from the following places: Mill Hill, at the water's edge and in springs; near Baptist church, in a nearly stagnant trickle; base of French's Knob, in springs; Nigger Mountain, in spring near look off rock. In the two highest places in which taken (Mill Hill and Nigger Mountain) this species accompanied *D. monticola* whilst the latter was absent from its two lowest environments (near the Baptist church and at the base of French's Knob) although the

forest floor in all four cases was generally similar. Not seen in places as dry as those in which *monticola* was at times.

10—*Desmognathus monticola* Dunn. Wood Puppy.

Abundant in damp and wet places up to 4,500 feet. Eighty-six were taken which varied from 23 to 125 mm. between July 25 and August 14 from the following places: Mill Hill, stream edge and damp places; Nigger Mountain, springs and damp woods; Bluff Mountain, damp woods; base of Paddy Mountain, spring; base of Mulatto Mountain, spring. While usually associated with dampness, they were frequently found considerable distances from water as compared with *fuscus* from here or other places.

11—*Desmognathus ochrophaeus carolinensis* Dunn. Wood Puppy.

This more terrestrial species of *Desmognathus* was taken in a wide variety of places. Twenty-nine individuals were taken between July 25 and August 9 which ranged from 19 to 90 mm. from the following localities: Mill Hill, dry woods; Nigger Mountain, dry woods, springs, and in a cave-like grotto; foot of French's Knob, damp woods; Bluff Mountain, damp woods; Buck Mountain, near Mica Mine; Hayfield, near edge of spring.

12—*Desmognathus quadra-maculata* (Holbrook). _____

Taken in and at the edge of small streams, usually less than one half mile from their origin. Dunn states, "Around Brevard they come down to 2100 feet in large streams."³ As none of our territory was of much less elevation than 3000 feet we have no data on their environment below that level, but none that we saw were in streams over three feet wide, although we should have taken them, if present in the larger creeks on account of the ichthyological collecting. The locality of their greatest abundance was at a height of 4300 feet near the summit of Bluff Mountain. Here in a stream rising from a spring about a mile back from the bluff this species was particularly common. They were taken as near to the precipice as we dared approach with collecting in mind, at which point a picturesque streamlet with an average depth of about two inches and a width of about three feet plunged nearly vertically to the valley over eight hundred feet below. One of the individuals taken there was marbled all over with lighter, but is undoubtedly referable to this species nevertheless. One larval example of 55 mm. was taken in a

³ See footnote 1, page 14.

spring on Buck Mountain near the Mica Mine. Another larva of 52 mm. was taken in the stream at the Bluff. Adults were taken in springs and streams on Mill Hill, Nigger Mountain and Bluff Mountain, as before noted, to the number of nine between July 25 and August 8 which varied from 55 to 110 mm.

DISTRIBUTION OF SALAMANDERS AT BEAVER CREEK

In Table No. 2 the species collected are arranged according to the chief localities. Those localities mentioned in this table that can not be found on the Cranberry or Wilksboro sheets of the United States Geological Survey map are explained below.

Mill Hill—A wooded hillock of 3400 feet on one's right if facing down stream at the Beaver Creek post office. See Figure 1.

Baptist Church—A small glen behind a church of that denomination about a quarter mile down stream from Beaver Creek. See Figure 2.

Rail Road Hill—A hill of 3200 feet, across the rail road from the post office, at a point about one quarter mile below the station.

French's Knob—A densely tangled rise of land of 3600 feet, about one mile southeast of Beaver Creek. The northwest base was collected on very successfully. See Figures 5, 6 and 8.

Mica Mine—A mine for high grade mica, now not in use, on the Buck Mountain is here referred to. It was in its near vicinity that the specimens were taken.

Carp Pond—A disused carp pond near Jefferson on the property of Mrs. C. Neal.

Order SALIENTIA

Family BUFONIDAE

1—*Bufo americanus* Holbrook.

Toad Frog.

Abundant. Many were seen, including practically all stages except the eggs. Eight adults measured as follows in head and body lengths, 105, 97, 86, 83, 73, 71, 65, 62 mm. The two smallest ones were decidedly reddish but lacked the drak throat patch characteristic of the male. One immature example of 8 mm. was nearly as red as the terrestrial form of *Triturus viridescens*. The natives consider these another species, calling them Red frogs and tell wonderful tales of how they descend in the rain. The great numbers

TABLE NO. 2

DISTRIBUTION OF SALAMANDERS

Species	Beaver Creek	New River	Mill Hill	Nigger Mount.	Bluff Mount.	Baptist Church	Rail Road Hill	French's Knob	Mica Mine	Paddy Mount.	Carp Pond
1 <i>Cryptobranchus allegheniensis</i>	Reported	Reported	—	—	—	—	—	—	—	—	—
2 <i>Triturus v. viri-</i> <i>descens</i>	—	—	—	—	—	—	—	—	—	—	Reported
3 <i>Plethodon cinereus</i>	—	—	Common	Not rare	Not rare	Abundant	1 small	Scarc	Not rare	—	—
4 <i>P. glutinosus</i>	—	—	Common	Not rare	Not rare	Common	—	Common	—	—	—
5 <i>P. metcalfei</i>	—	—	—	2 young	Not rare	—	—	—	—	—	—
6 <i>P. vonahlossee</i>	—	—	1 adult	Larvae	2 young	—	—	—	—	—	—
7 <i>Eurycea bislineata</i>	—	—	1 adult	common	common	—	—	—	—	—	—
<i>wilderae</i>	—	—	1 adult	—	Not rare	1 adult	—	1 adult	—	—	—
8 <i>Pseudotriton ruber</i>	—	—	1 adult	—	1 adult	—	—	—	—	—	—
<i>niditus</i>	—	—	1 larva	—	1 larva	2 adult	—	—	—	—	—
9 <i>Desmognathus f.</i> <i>fuscus</i>	—	—	Not rare	1 small	—	Not rare	—	Not rare	—	—	—
10 <i>D. monticola</i>	—	—	Common	Abundant	Common	—	—	—	—	Abundant	—
11 <i>D. ochrophaeus</i>	—	—	Not rare	Common	Common	—	—	Not rare	1 small	—	—
<i>carolinensis</i>	—	—	—	Common	Common	—	—	Not rare	—	—	—
12 <i>D. quadrimaculata</i>	—	—	Common	Not rare	Abundant	—	—	—	1 larvae	—	—

in which small toads of this size appear in these mountains after a cloudburst is nevertheless extremely impressive. Tadpoles in various stages were seen as late as August 16.

Family RANIDAE

2—*Rana catesbeiana* Shaw.

Bull Frog.

A single specimen of 91 mm. was taken in the minnow fyke in the Beaver Creek, near the post office. A number were heard along the New River on August 13 at mid-day in fair hot weather.

3—*Rana clamitans* Latreille.

Frog.

Two tadpoles of this species 70 and 53 mm. long were seined in the Beaver Creek about one mile below the mill on July 28. No adults were seen.

4—*Rana palustris* LeConte.

Frog.

Several examples were seen in the meadows about Beaver Creek.

5—*Rana sylvatica* LeConte.

Frog.

One example of 30 mm. was taken on July 31 on the east side of Mill Hill at the edge of a dry woods. This individual departed from the typical *sylvatica* in that its back was markedly rugose, but in other respects was perfectly normal.

Class REPTILIA

Order SQUAMATA

Suborder SAURIA

Family IGUANIDAE

1—*Sceloporus undulatus* (Latreille). Scorpion, Fence Lizard (rare).

This species which the natives hold in unnecessary awe was seen quite frequently, being perceived as usual on old fence rails in the hot sun. Only two specimens were taken as there seemed to be no very good excuse for destroying numbers of these harmless and interesting lizards. One was a typical male of 135 mm. and the other a female of 134 mm. Both had their stomachs crammed full of fragmentary insects, most of which seemed to be coleopterous. July 27 and 28 are the respective dates of capture. On August 15 near the crest of Mill Hill in a clearing an individual was noted which was blotched with whitish. Partial albinism was thought of, but when the animal allowed itself to be picked up and handled without attempting to escape it seemed likely that some disease

afflicted the creature. It was allowed to perch freely on the finger, and strangely enough permitted a stroking of the white spots, responding only by craning its neck and blinking its beady eyes. This gentle stroking caused the scales to drop off in a shower of dandruff-like flakes and it was then obvious that the animal was merely shedding, as beautifully brilliant scales appeared wherever the old ones fell from. After a few minutes of this sort of treatment it decided it had stood for enough and with one powerful leap left the scene. Subsequent examination of the shed scales showed that they had completely sheathed the new formation simply tearing away all around the base. The whitish appearance is accounted for by the fact that air found its way between the loose old scales and the new. This contrasts strongly with such fine scaled forms as *Anolis* in which the epidermis is cast off in large patches, sometimes the entire covering coming away almost as one piece.

Suborder SERPENTES

Family COLUBRIDAE

1—*Carphophis amoena* (Say). Snake.

Two examples of 23 and 28 cm. were taken between July 27 and 31 and one of 24 cm. in 1915. A few others were seen, all in typical localities under stones and rubbish. The natives hardly know this unobtrusive form.

2—*Diadophis punctatus edwardsii* (Merrem). Snake.

Three examples from 29 to 35 cm. were taken in places similar to that of the above and usually close by between July 27 and 30. Numerous others were seen.

3—*Elaphe obsoleta obsoleta* (Say). Black Snake.

One example of 168 cm. was taken from the north side of the Mulatto Mountain on July 31. It is said to be fairly common by the natives, who hold it to be poisonous.

4—*Lampropeltis triangulum triangulum* (Lacepede). Snake.

One example of 49 cm. was taken at Beaver Creek on July 22. Not recognized as a distinct species by the inhabitants of that place.

5—*Natrix septemvittata* (Say). Water Snake, Water Moccasin.

Three examples all in the vicinity of water, varying from 28 to 61 cm. in length were taken between July 22 and August 11. The natives, are not sure as to whether these are dangerous or not.

6—*Natrix sipedon fasciata* (Linnaeus). Water Snake, Water Moccasin.

Two examples, 71 and 79 cm. were taken near water on August 3 and 11. Many others were seen, it being a very common form in this vicinity. The natives confound this with the preceding species.

7—*Thamnophis sauritus* (Linnaeus). Snake.

One example from near the base of Buck Mountain was taken on August 11. It measured 54 cm. in length.

8—*Thamnophis sirtalis sirtalis* (Linnaeus). Snake.

Three examples from 56 to 105 cm. in length were taken between July 22 and August 13. The largest one was about to give birth to thirty-seven young which varied from 14.0 to 17.2 cm. and showed a mode of 16.0. A common species.

Family CROTALIDAE

9—*Crotalus horridus* Linnaeus. Rattlesnake, Rattler.

The natives hold this snake in great fear and report that it is common and especially abundant at certain places. A careful though unsuccessful search was made both in 1915 and 1922 in the vicinity of reputed "dens." Once did the junior writer believe a specimen was seen but it slipped away amid a pile of debris too rapidly for positive identification. Not one was definitely seen by us and it may be significant that not an individual questioned had a rattle to show as evidence. As boys living in areas infested with these reptiles usually have a few sets of such mementoes we infer that the species is not common in this vicinity.

Order TESTUDINATA

Family CHELYDRIDAE

1—*Chelydra serpentina* (Linnaeus). Terrapin.

One specimen was seen with a carapace of 102 mm. It was typical and was taken in a small swamp near the north side of the Mulatto Mountain. This species is said not to be uncommon by the

natives, who relish it as food. *Chelydra* is known in this region simply as Terrapin while all others are known as Dry-land Terrapin whether they are aquatic in habit or not. The shorter and less cumbersome names of Turtle and Tortoise are unknown terms to most of these mountaineers.

Family TESTUDINIDAE

2—*Clemmys muhlenbergi* (Schoepf). Dry-land Terrapin.

Two specimens were taken, one of which subsequently escaped. The measurements of the other were as follows. Carapace length 91.5 mm., width 69 mm., plastron length 80 mm., width 56 mm., length of tail (vent to tip) 17 mm., head width 17 mm. Carapace brownish black, no blotching whatsoever. Plastron with light brown and yellowish blotching, bridge similar. Nuchal plate 6 mm. Taken near the Baptist church on July 28 in a discarded horse trough.

